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ABSTRACT

A nationwide study of six school-based clinics (SBCs) reviews factors contributing to the development of the SBC movement and gives recommendations to enhance clinic effectiveness. Clinic utilization and its impact on medical care, on students' risk-taking behaviors, and on pregnancy prevention are also assessed. Student populations in schools with clinics are compared to student populations in schools without clinics. Data were obtained from interviews with students and school and clinic staff, client records, the Student Health Survey, and longitudinal birthrate records. Findings indicate that SBCs successfully provide students with regular comprehensive health care. Whether SBCs actually increase student access to medical care or simply replace former providers remains a question. SBCs show potential for the reduction of students' alcohol and tobacco use, but appear to have no effect on pregnancy rates. Contraceptive use among sexually active teens increases when SBCs provide both access and information. With adequate financial and community support, SBCs may improve health care and reduce risk-taking behavior among students. (28 references) (LMI)

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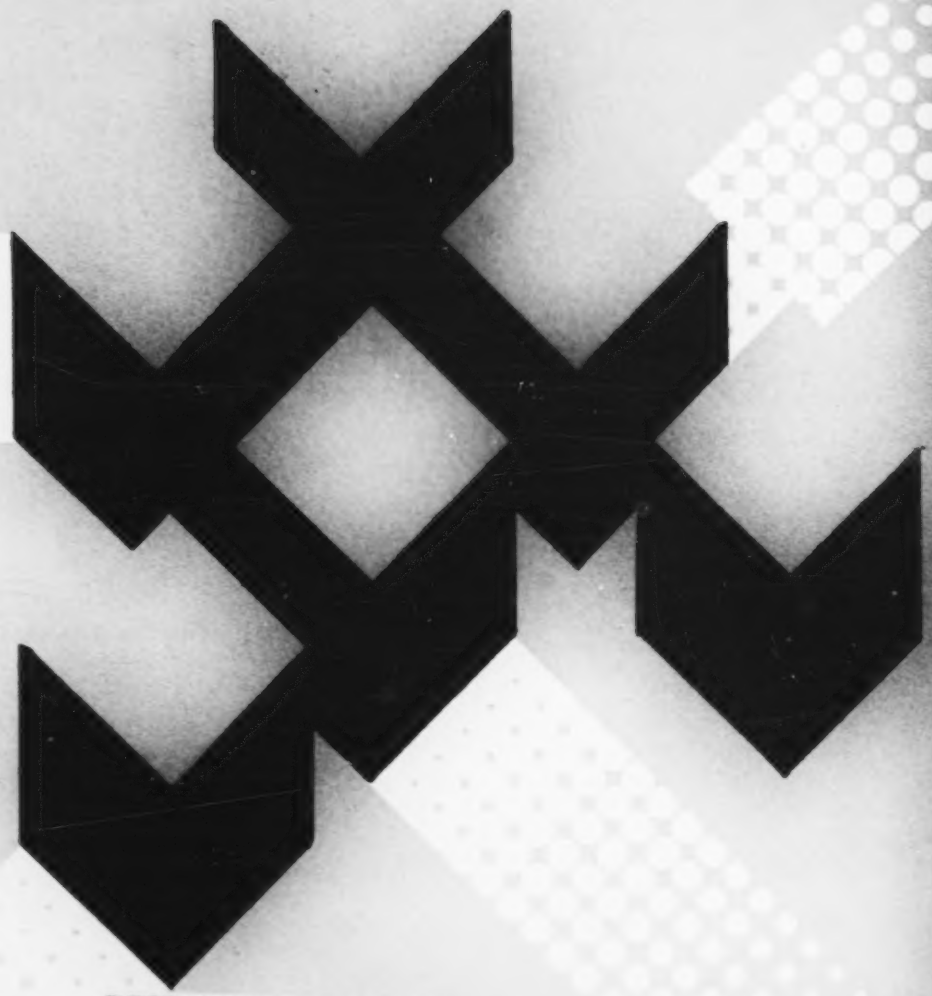
School-Based Clinics Enter the '90s: Update, Evaluation and Future Challenges



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School-Based Clinics Enter the '90s: Update, Evaluation and Future Challenges

Since the first school-based health clinic opened in a Dallas high school in 1970, school-based clinics have been seen not only as a means of providing basic health care to medically underserved teenagers, but also as a promising way of addressing some of the increasingly intractable and complex health and social problems facing young people, particularly unintended pregnancy.*

Today, there are 150 school-based clinics (SBCs) operating in middle, junior, and senior high schools in most major cities as well as in many rural areas, usually with widespread public support.** These clinics, which often serve low-income, predominantly minority youth with limited access to other sources of health care, provide a wide range of medical and counseling services. Most provide primary health care, physical examinations, laboratory tests, diagnosis and treatment of illness and minor injuries, immunizations, gynecological exams, pregnancy testing and counseling, referral for prenatal care, birth control information and referral, nutrition education, weight reduction programs and counseling for substance abuse. Some offer prenatal care on site; a few dispense contraceptives and provide day care for children of students.

School-based clinics are well used by students in the schools they serve. On average, about half of the student body enrolls in the SBC – in some schools the proportion is much higher – and eight in ten of those enrolled actually use the clinic's services. For about half of enrolled students, school-based clinics are their sole or primary source of health care (5).

As the SBC movement stands on the brink of its third decade, however, it is appropriate to assess more definitively than ever before the actual impact of these clinics on students' access to medical care and on their health-related behavior, and to gain a better understanding of the potential impact of school-based clinics and methods of enhancing their effectiveness and reaching that potential. Perhaps excitement over the promise of school-based clinics led to unrealistic expectations of what these clinics, by themselves, could accomplish, particularly in influencing students' risk-taking behavior.

With these objectives in mind, the Center for Population Options (CPO) in 1984 launched a major project designed to evaluate a diverse group of clinics located in different parts of the country. The project sought to assess the students' utilization of clinic services and the clinics' impact on use of medical services generally. It also sought to determine what, if any, effect the clinics had on students' absenteeism, illegal drug use, alcohol consumption, cigarette smoking, and unprotected sexual intercourse, focusing particular attention on students' contraceptive use and the clinics' success in preventing unintended pregnancies. Finally, the study sought to examine clinics' potential to better meet their desired objectives and to identify ways they could do so. Included in this executive summary is a brief review of the principal factors that contributed to the development of school-based clinics and the current status of the school-based clinic movement, and following the summary of the findings, a discussion of their implications, and recommendations for making clinics more effective.

*The National Research Council of the National Academy of Sciences, for example, has called comprehensive health clinics in schools with large, high-risk populations a most promising approach to pregnancy prevention (1). Similarly, the Office of Technology Assessment has recommended the development of comprehensive school-based clinics in order to reduce high-risk pregnancies among teenagers (2). Such prominent organizations as the National Parent Teacher Association, the American Academy of Pediatrics, the National Education Association, the American College of Obstetricians and Gynecologists and the Association of School Nurses have publicly supported school-based clinics.

**Polls in Michigan and Oregon, for example, show that 77–80 percent of adults favor school-based clinics and that support is highest among parents of public school children (3). And nearly four out of five adults surveyed in North and South Carolina favor the establishment of school-based clinics (4).

School-Based Clinics: A New Approach

Public schools have been involved in efforts to improve student health since before the turn of the century. Until recently, however, school health services were largely limited to health inspection, screening and assessment, and first aid provided by nurses, who, because of nursing practice regulations were unable to provide direct medical care or to prescribe and dispense medications.

Student health services in some schools began to change in the 1960s as a result both of the growing recognition that adolescents, in particular, needed better access to health care and of an increased commitment on the part of government and private foundations to the provision of health and social services to disadvantaged populations. Efforts to develop innovative health programs accelerated in the succeeding 10-20 years in response to several major developments:

Reasons cited most frequently by sexually active students for not using contraception:

- I didn't expect to have sex.
- I just didn't think pregnancy would occur.
- My partner didn't want me to use birth control.
- I didn't know where to get birth control.
- I felt uncomfortable going to a strange clinic.
- I just didn't get around to it.

■ **A dramatic increase in the number of single-parent households.** In 1985, 22% of families with children under 18 were headed by a single parent (6). Twenty-four percent of children under age 18 lived in single-parent households; another 3% (1.9 million children) lived with neither parent (7).

■ **A large increase in the number of children living in poor families.** More than 20% of all children under the age of 18 now live in families whose income is below the federal poverty level ($12,100 for a family of four) (8), and some 44% of these children live in families with incomes below half of the poverty standard (9).

■ **Rapid increases in health care costs at a time when the number of families with no medical insurance also increased.** In 1984, 14% (4.5 million) of all 10- to 18-year-olds had no health insurance (10).

■ **An increase in public awareness of and concern about the country's high rates of teenage pregnancy.** About one million teenage girls become pregnant in the United States each year; some 416,000 of these teens terminate their pregnancies by abortion and roughly 480,000 give birth.* (The remaining pregnancies are miscarried or result in stillbirths (11). These rates are significantly higher than rates in other western industrialized countries, despite similar levels of adolescent sexual activity (12).

■ **Widespread use of illegal drugs among adolescents.** Although drug use appeared to have declined slightly, at least among high school seniors (13), it remains a serious problem, as does consumption of alcohol among teenagers.* Furthermore, the emerging crack problem may have serious, but as yet not fully understood, consequences for adolescents.

In the face of these developments, comprehensive health clinics – located on school campuses, staffed by health professionals trained in working with teenagers, and able to provide services at nominal or no charge – came to be viewed as a promising approach to addressing the increasingly complex health care needs of adolescents. Now, the threat posed by AIDS (acquired immunodeficiency syndrome), along with rising rates of other sexually transmitted diseases (STDs) among teenagers, has added new urgency to the effort to provide adolescents with information to help them avoid risk-taking behavior, together with medical services to identify and address health problems that arise as a result of such behavior.

The appeal of school-based clinics has been bolstered by the realization that many teens do not receive adequate medical attention and are forced to rely heavily on more costly services of hospital emergency rooms when problems arise. These emergency rooms can treat serjous illnesses and injuries, but do not provide ongoing preventive medical care or health education and do not treat emotional and psychological problems unless they are severe. Some 15% of 16- and 17-year-olds have no regular source of medical care (17).

To a great extent, this inadequate health care is probably a consequence of the high cost of medical care and the widespread lack of insurance. However, it also reflects the fact that scheduling doctor visits has become a problem in this era of single-parent and two-working-parent households. Doctors' offices and health clinics normally are not open in the evenings and on weekends, and working parents often have difficulty arranging to leave their jobs to take their children to a doctor during the day. Furthermore, while increasing numbers of pediatricians have had some training in adolescent medicine, teenagers are often treated by physicians, whether pediatricians or adults' doctors, who are ill-equipped to deal with many of the sensitive issues that concern adolescents, particularly those relating to sexual development.

School-based clinics that provide comprehensive primary health care can address many of these problems of access because they do not require parents to arrange to take their child to a doctor; they offer confidential* services free or at low cost, often without a prearranged appointment; and they employ nurse practitioners, doctors and counselors who are skilled at identifying and treating physical as well as emotional and psychological problems that students often face.

* These births typically have a negative impact on the teen mothers' lives in terms of education, job opportunities and the ability to stay off of welfare, and they also have a serious impact on society: Three federal poverty programs – Aid to Families with Dependent Children (AFDC), food stamps and Medicaid – together spend more than $19 billion annually to help families in which the mother gave birth as a teenager (14).

*About 40% of all teenage deaths are the result of automobile accidents (15), many of which involve teenage drivers who have been drinking. About one-quarter of eighth graders and more than a third of tenth graders report having had five or more drinks on at least one occasion (16).

*Virtually all clinics require students to have parental consent to enroll in the program; some seek blanket permission to provide all services, others give parents the opportunity to indicate which services their children may, or may not, receive. State law, however, often permits certain services, such as family planning, treatment for sexually transmitted diseases (STDs) and drug and alcohol abuse counseling, to be provided without parental consent, and some clinics do not require parental consent for these services.

School-Based Clinics in 1989

According to CPO's latest survey of school-based clinics, conducted in the spring of 1989 by its Support Center for School-Based Clinics, there are currently 150 school-based clinics operated by a total of 90 programs, most of which are traditional providers of medical care – hospitals and medical schools, public health departments, nonprofit organizations, and community health clinics; however, an increasing number of clinics (currently 20%) are operated directly by school districts (see Table 1.1). The number of clinics has increased five-fold since 1983 (18).

Clinics are now located in 32 states and in 91 communities. Most operate in senior high schools, although 14% are in junior high or middle schools. Schools with school-based clinics have an average enrollment of about 1300 students, although the size of the student body ranges from 224 to 3627. On the average, 48% of students in clinic schools are enrolled in the clinic and thereby eligible to receive services, and 80% of those enrolled use the clinic at some point during the year.

A majority of clinics are open at least 40 hours a week, although the proportion declined from 76% in 1988 to 66% in 1989. Almost 90% of clinics operate every weekday, and more than half remain open during the summer, although these percentages also dropped somewhat from 1988 to 1989. These declines reflect decreases in funding, which force clinics to use fewer staff and to shorten their hours of operation (see Box).

Clinic Users

Fifty-nine percent of all clinic users are black (up from 49% in 1988). This reflects the fact that school-based clinics typically serve low-income areas, which tend to be disproportionately populated by minorities. About one-quarter of users are white, and 12% are Hispanic. On the average, 38% of clinic users are male. Males are typically a difficult group to reach with adolescent health services. One recent study, however, found that school-based clinics saw a larger proportion of males than did other adolescent health programs (19). About one-third of school-based clinic users have no health insurance.

Most clinics limit eligibility for services to students enrolled in the school in which they are located, but some also are open to dropouts (16%), children of students (16%), other family members of students (11%), and adolescents in the broader community (9%).

Clinic Services

The average clinic serves 59 students and handles about 183 visits each month. Table 1.2 shows the broad array of services that school-based clinics provide. For the most part, this list has changed little in the past few years, but there have been some notable changes in the proportion of clinics offering certain services, particularly in the area of reproductive health care: only 15% currently dispense contraceptives, compared with 28% in 1986, and the proportion that prescribe contraceptives declined from 52% to 40% over the same time period. Whereas, 20% of clinics referred students to family planning agencies for birth control in 1986 (20), almost three-quarters do so now. It thus appears that despite widespread public support for providing contraceptives in school-based clinics,* few of the clinics that have opened in recent years have decided to dispense contraceptives.

The proportion of clinics offering prenatal care also has dropped markedly, from 47% in 1987 (21) to 30% in 1989; however, 94% of clinics refer pregnant students for prenatal services. There have been smaller declines in the past year in the percentages of clinics providing drug and substance abuse counseling, weight reduction programs, gynecological exams and mental health and psychosocial counseling. These declines are not considered significant, however, because newer programs tend to add these programs after the first year or so of operation, and the decline reflects the addition of many new programs.

* A 1988 Harris Poll, for example, indicates that 80% of adults favor making birth control information and contraceptives available in school-based clinics (22).

Funding for School-Based Clinics

School-based clinics are funded by a variety of public and private sources. In 1989, about two-thirds of SBC funding came from public sources: the states accounted for 19% of total funding; cities and counties contributed 16%; and the Maternal and Child Health Block Grant also provided about 16% of clinic funding. Medicaid, the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program and the Community Health Services Block Grant each provided between 2% and 4% of total funding. School districts contributed about three percent.

Foundations are virtually the only source of private funding for school-based clinics. In 1989, foundations provided 31% of total funding, down from 41% the previous year. Insurance payments and patient fees each accounted for less than one percent of clinic funding.

Most clinics were funded by at least two sources, and about half by at least three. Clinics also received in-kind contributions, primarily in the form of facilities, utilities and maintenance. The value of in-kind support ranged from $4,700 to $137,000 and averaged about $35,000.

SBC operating budgets averaged $125,000 in 1989, although they ranged from $100,000 to $313,000. As would be expected, the average varied substantially depending on the clinic's hours of operation. Clinics open less than 20 hours a week had an average operating budget of $43,000, while a clinic open 40 hours had an average budget of $142,000. Clinics that had been open less than a year had higher budgets than those that had been operating for three years, reflecting higher one-time start-up costs.

Table 1.1
Percentages of school-based clinics (N = 130) by type of sponsoring agency, according to recent survey results

Type of agency	Percentages
Hospital/medical school	26
Nonprofit organization	19
Community clinic	12
Public health clinic	23
School system	20

Table 1.2
Percentages of school-based clinics (N = 92) currently providing various services, according to recent survey results

Services provided	Percentages
Medical services	
Sports/work physicals	98
Diagnosis/treatment of minor injuries	97
General primary health care	96
Lab tests	96
Prescribe medication	96
Assessment/referrals to local physicians	93
Assessment or referrals to community health care	92
General physicals	91
Immunizations	89
Chronic illness management	75
Dispense medication	74
EPSDT screening	54
Dental services	34
Pediatric care for infants	29
Counseling/educational services	
Health education	98
Nutrition education	96
Mental health/psychosocial counseling	89
Pregnancy counseling	83
Sexuality education in class	83
Weight reduction programs	79
Family counseling with student and parents	62
Drug/substance abuse programs	61
Job counseling	25
Reproductive health and family planning services	
Referrals for prenatal care	93
Pregnancy tests	88
Counseling on birth control methods	85
Diagnosis/treatment of STDs	78
Gynecological exams	77
Referrals for birth control methods and exams	72
Follow-up for birth control users	71
Exams for birth control methods	55
Prescriptions for birth control methods	43
Prenatal care on-site	28
Dispensation of birth control methods	12
Other activities	
AIDS education program in class	38
AIDS education program in clinic	34
Day care for children of students	15

Reasons cited most frequently for using school-based clinics: (according to Student Health Survey data)

- It is part of the school, and I can trust it.
- The staff cares.
- It is easy to get to.
- It is the cheapest clinic.
- Services are confidential.

9

Past Research on Clinic Effectiveness

This statistical information provides valuable data on how school-based clinics are currently operating and whom they are serving, but it does not assess clinics' effectiveness in delivering services and in enabling students to avoid unplanned pregnancies and risk-taking behaviors.

Perhaps because most of the growth in school-based clinics has occurred in the last few years there has been little research on the clinics' impact on student health and behavior. However, studies that have been done provide some evidence that clinics can have a positive impact in this area. For example, a student survey conducted two years after the opening of a school-based clinic in a Kansas City, Missouri high school found that 55% of clinic users who were sexually active used some form of birth control, compared with only 35% of sexually active students who did not use the clinic (23). An analysis of the effect of school-based clinic use on adolescent contraceptive behavior among students at a large urban high school in Texas found that clinic users were twice as likely to use contraception every time they had sex, compared with students who had not been to the clinic. Furthermore, clinic users were less than half as likely to have never used a birth control method. Of course, there may have been self-selection effects – students who were sufficiently motivated to use the clinic for contraception also might have obtained it elsewhere if the clinic had not been present. The researchers concluded, however, that "a number of factors may influence an adolescent's decision to seek preventive health or reproductive services, but, at the least, school-based clinics may enable students to carry out preventive intentions and to avoid an unplanned pregnancy (24)."

	Dispensing	Prescribing	Counseling/Referrals
1986	28%	52%	20%
1987	21%	48%	80%
1988	15%	46%	86%
1989	12%	43%	85%

Trends in contraceptive services offered by school-based clinics from 1986 to 1989.

Stronger evidence was found in a study comparing an experimental pregnancy prevention program that combined classroom presentations and counseling in two inner-city Baltimore schools with reproductive health services provided to the students at a nearby clinic. Significantly lower pregnancy rates were found among the experimental program participants. Over a period of nearly three years, the pregnancy rate declined 30% among students in the program schools – one junior high and one senior high – while it increased 58% in two control schools. In addition, there was an average delay of almost seven months in the initiation of sexual intercourse among the program-school students, and younger students in the experimental schools were much more likely than those in the control schools to use contraception. Although technically not a school-based clinic (medical services were not provided in the school itself and the clinic provided only reproductive health care), the program's evaluators concluded that access to high quality free services, professional counseling, education, and open communication – all key elements of a good school-based clinic – were important to the program's success: "All these factors appear to have created an atmosphere that allowed teenagers to translate their attitudes into constructive preventive behavior (25)."

Reported declines in fertility rates among students in high schools participating in the school-based clinic program in St. Paul, Minnesota (26), are often cited as evidence of the positive impact of SBCs. It is not clear, however, how great an impact the program had on the early large decline in birthrates because there was only one year of baseline data for the period before the program began, the data were dependent upon program personnel's knowledge of births among students, and because abortion data were not available.

Other studies have provided data on other health problems. For example, one study reported that a clinic in West Dallas detected previously undiagnosed health problems, including such potentially serious conditions as heart murmurs, in 30% of the students who attended the clinic (27). Another study reported that 32% of Pap smears taken at two school-based clinics in New York City were found to be abnormal during a four-month period (28).

Six School-Based Clinics: An In-Depth Evaluation

Given the rapid recent proliferation of school-based clinics, and given the fact that SBCs are often cited as an effective way of addressing some of adolescents' most serious health and social problems, the Center for Population Options believed more information was needed on the actual effect of school-based clinics on students' use of medical care, absenteeism, and their impact on risk-taking behaviors, such as smoking, drinking, illegal drug use, and unprotected sexual intercourse (including contraceptive use and pregnancy). CPO also thought it was important to understand the barriers to effective delivery of services and the potential for improving clinics' effectiveness. Recognizing that a study of multiple sites would allow greater generalization of the findings to other school-based clinics than would an analysis of a single clinic, CPO selected six clinics for in-depth evaluation. These clinics were chosen because they met predetermined criteria regarding size of population served, logistical considerations, nonparticipation in other evaluation projects and the sites' interest in participating. Although these clinics account for only 4% of the total number of clinics currently operating, and although the clinics may have increased their effectiveness since the last data were collected in 1987 and 1988, the study nonetheless sheds light on the areas where school-based clinics have had or can have a positive impact, as well as on the areas where clinics are not likely to have as much of an effect as had originally been expected.

The clinics selected for evaluation were in Gary, Indiana; Muskegon, Michigan; Jackson, Mississippi; Dallas, Texas; Quincy, Florida; and San Francisco, California. All six clinics served low-income populations, provided primary health care, and were open daily during school hours. In a number of important respects, however, they differed from each other. The Dallas clinic, for example, is the country's oldest SBC, having opened its doors in 1970. The San Francisco and Quincy clinics, on the other hand, had not opened when the research project began. The clinics also varied significantly in size, ranging from 1600 visits annually in the Gary clinic to 10,500 visits (including students from schools other than the clinic site) in Dallas, which was the only one of the clinics studied that served teenagers who did not attend the home school.* In five of the six schools, the students were predominantly black, but the San Francisco student body was a mixture of black, Hispanic and Asian students. The clinics also varied in their principal goals and objectives; some, for example, stressed pregnancy prevention, while others did not.

To evaluate each clinic, it was necessary to have some means of comparing student populations in schools with clinics to student populations without access to clinic programs. For each of the four clinics operating at the initiation of the project – Gary, Muskegon, Jackson, and Dallas – comparison schools were identified that were as similar as possible to the clinic schools in terms of relevant sociodemographic characteristics and as physically close as possible. Since clinics had not yet opened in the Quincy and San Francisco schools when the study began, baseline data on variables of interest could be collected and compared with data gathered after the clinic had been operating for two years. Data used in the evaluation were drawn from four sources, which together present a coherent and consistent picture of school-based clinics. The sources were:

- **Interviews with school and clinic staff and students** conducted throughout the course of the project, which provided general information about the school and its clinic.
- **Records from each of the clinics,** which, though they varied from computerized encounter forms to handwritten logs, were all able to provide data on the number of clinic users and their sociodemographic characteristics; the number of clinic visits per user and diagnoses made at each visit; the number of lab tests and referrals made; the number and type of family planning visits; and, depending on the particular clinic, the number of students referred either for contraception or the number given prescriptions or contraceptives.
- **The Student Health Survey,** administered to a sample of students at both the clinic and comparison schools, which provided data on the impact of school-based clinics on students' attitudes and behaviors related to seeking medical services, risk-taking, and pregnancy prevention.
- **Longitudinal birthrate data,** which were collected in two sites – Gary and Muskegon – to assess those clinics' impact on birthrates. In Gary, comparisons could be made between the clinic and non-clinic schools over an eight-year period. In Muskegon, birthrates at the clinic school over a seven-year period before and after the school clinic opened were compared.

Survey and birthrate methods were used in this study assessed the clinics' impact upon the entire student body, and not specifically upon those who actually used the clinic. Comparisons between clinic users and nonusers in terms of clinic impact have the disadvantage of possible selection bias due to the different characteristics and motivations of students who choose to use the clinic and those who do not. Because it is impossible to randomly assign students to school-based clinic services, this is a difficulty that cannot be resolved in this type of evaluation. In addition, although the sample sizes were quite large, they were not sufficiently large to detect small changes or changes in infrequently occurring outcomes, such as pregnancy. Finally, all self-report data are always open to the criticism that they are not reliable or valid, but there is evidence presented in this report that the data were reliable in most cases.

*The clinic is part of the Children and Youth Project administered by the University of Texas Health Science Center. It serves adolescents aged 12-18 in the community regardless of whether they attend the clinic school.

Clinic Utilization

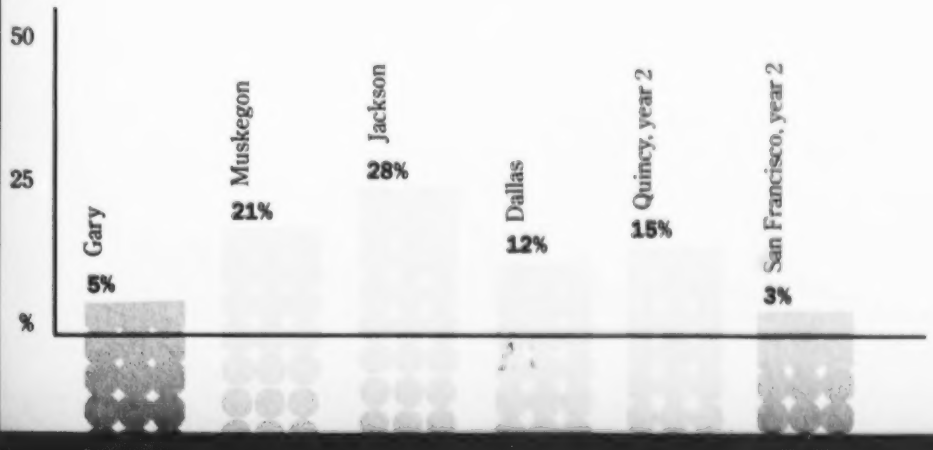
One measure of the effectiveness of school-based clinics is the extent to which they are used by the students. Clinic use was measured in terms of the percentage of students visiting the clinic in a single year; the percentage of the students who ever had visited the clinic; and the number of visits per student.

Clinic use. Clinic use was highest in Dallas and Muskegon, where 80% and 70% of the student body, respectively, attended the clinic in a single year, and 83% and 82% ever had visited the clinic. About two thirds of the students in Quincy and Jackson used the clinics in a single year, while one-quarter did so in San Francisco and Gary; again, the percentages who had ever used the clinic were higher than the single-year percentages in each of these schools. Moreover, the longer the students had been in the school, the more likely they were to have used the clinic. In Dallas, for example, 74% of first-year students and 89% of fourth-year students had used the clinic at some point. And the proportion of students ever using the San Francisco clinic increased from 40% at the end of the first year to 50% at the end of the second. This is undoubtedly because the longer students had attended the clinic school, the more opportunities they had to learn about the clinic, both from the staff in classroom presentations and through other "official" channels, and also from friends and classmates. They also had a longer period of time in which a need for medical care could have arisen.

Number of clinic visits. Many students who used the clinic did so only once or twice during the course of a year: in four sites that could provide information on visits per student in a single year, more than half of the users visited the clinic no more than three times a year. Similarly, the health survey indicated that most students who had ever used the clinic had done so infrequently; however, between 8% and 29% of users had visited the clinic a total of at least eight times, and could be considered "core" users.

Clinic users. The clinics served a greater percentage of females (53% to 64% of students at each site) than males; clinic users were overwhelmingly black, except in San Francisco, where clinic users were more equally divided among blacks, Hispanics, and Asians; and users were concentrated among 16- and 17-year-olds. In each case, the proportions generally reflected the composition of the student body. A majority of clinic users came from low-income and/or single- or no-parent households; between 48% and 68% lived with one or neither parent, for example, and 6% to 40% of users' families received food stamps.

Percentages of students surveyed from each clinic school who received contraceptive counseling from their school-based clinic.

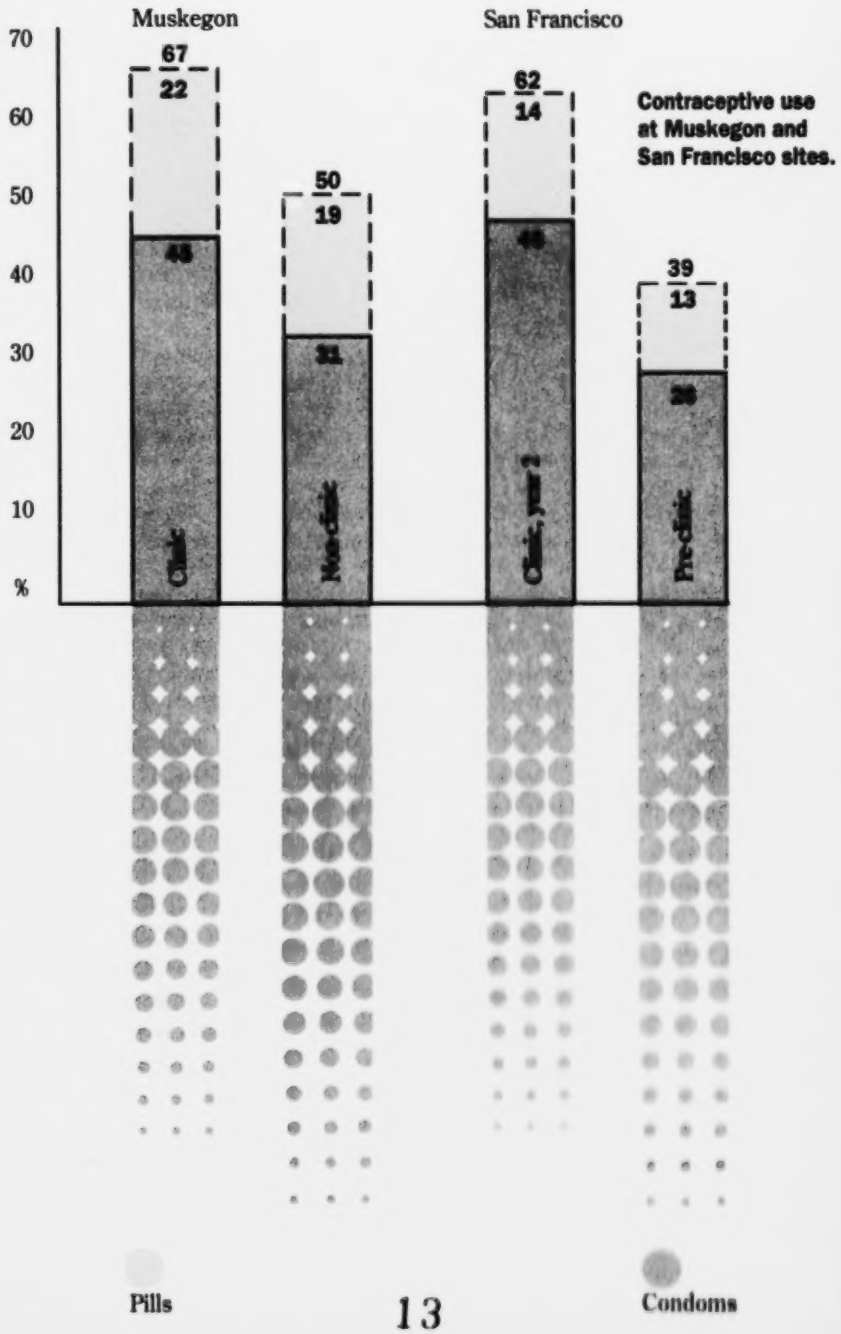


Clinic services. There were various services offered to students at different sites. All clinics offered some primary care (first aid/emergency care and treatment of sickness), but they varied in the extent to which they addressed reproductive health. All provided contraceptive counseling, for example, but this service was used most widely at the four clinics – Muskegon, Jackson, Dallas, and Quincy – that also dispensed or provided vouchers for contraceptives. Seventeen to 26 percent of all students surveyed at these four schools used the clinic to obtain contraceptives, and according to clinic records at those sites, family planning visits comprised 24% to 28% of their total visits. At the two clinics that did not provide contraceptives, very few students (3% to 5%) used the clinics for contraceptive counseling and referrals.

Some clinics provided preventive care in the form of general health assessments or health maintenance exams, screened for specific problems, such as high blood pressure, and offered assistance with nutrition and weight control. All made referrals for dental care, and the Dallas clinic provided regular dental services on site.

Reasons for clinic use and non-use. Users cited easy access and their relationship with the staff as their chief reasons for using the clinic. Specifically, the three most often cited reasons were: the clinic was part of the school and they felt they could trust it; the clinic was easy to get to; and the staff was caring. Students who cited one of these reasons used the clinic more frequently and for a greater variety of services than students who did not cite these reasons for use.

Lack of need was the principal explanation students gave for never having visited the clinic; it was cited by 43% to 87% of nonusers. In addition, some students didn't feel comfortable at the clinic, and others were concerned about confidentiality. Six to 27 percent said they "just didn't get around" to going to the clinic.



Contraceptive use at Muskegon and San Francisco sites.

Impact on Utilization of Medical Care

To determine whether the presence of a school-based clinic affects students' overall utilization of medical care, comparisons were made between each of the six clinic-school samples and their non-clinic-school counterparts on the length of time that had elapsed since students had seen a doctor or a dentist, and whether they had visited an emergency room or had been hospitalized during the past year. Information gathered in Dallas and Quincy concerning how recently students had had a physical examination or routine lab tests was analyzed as well.

Doctor visits. The same percentages of clinic- and comparison-school students at each site (roughly two-thirds to three-quarters) had seen a physician within the previous 12 months, and between 79% and 93% had done so within the last two years. Only the Dallas clinic, which was the only clinic in the study that employed a full-time physician and which arranged for all students to receive an examination when they first entered the school, had an impact on how likely the students were to have seen a doctor recently; 72% of students in the clinic school, but only 61% of the students in the comparison school, had seen a doctor within the previous 12 months.

Lab tests/examinations. Also in Dallas, a larger percentage of students in the clinic school than in the comparison school had received a physical examination, a blood test, and a urine test within the last two years, although the proportions were high in both schools, ranging from 70% to 86%. And in Quincy, the only other site where these services were measured, there also was a significant increase in the percentage of students who had recently had a urine test after the clinic had been operating for two years, but there was not a significant increase in the percentages of students who had received a blood test or physical examination.

Dental care. In two sites – Muskegon and Dallas – the students in the clinic schools had seen a dentist more recently than in the comparison schools. The Dallas clinic provided dental care on site, while the Muskegon clinic made referrals for dental care. In the remaining four sites, however, no differences were found.

Given the significant impact of the school-based clinic on health care received by students in Dallas, in terms of visits to a doctor and a dentist, physical examinations and laboratory tests, it seems likely that clinics that have a large staff, offer a wide array of services, and make a concerted effort to bring students into the clinic would have greater impact on students' receipt of health care than clinics that do not meet these conditions.

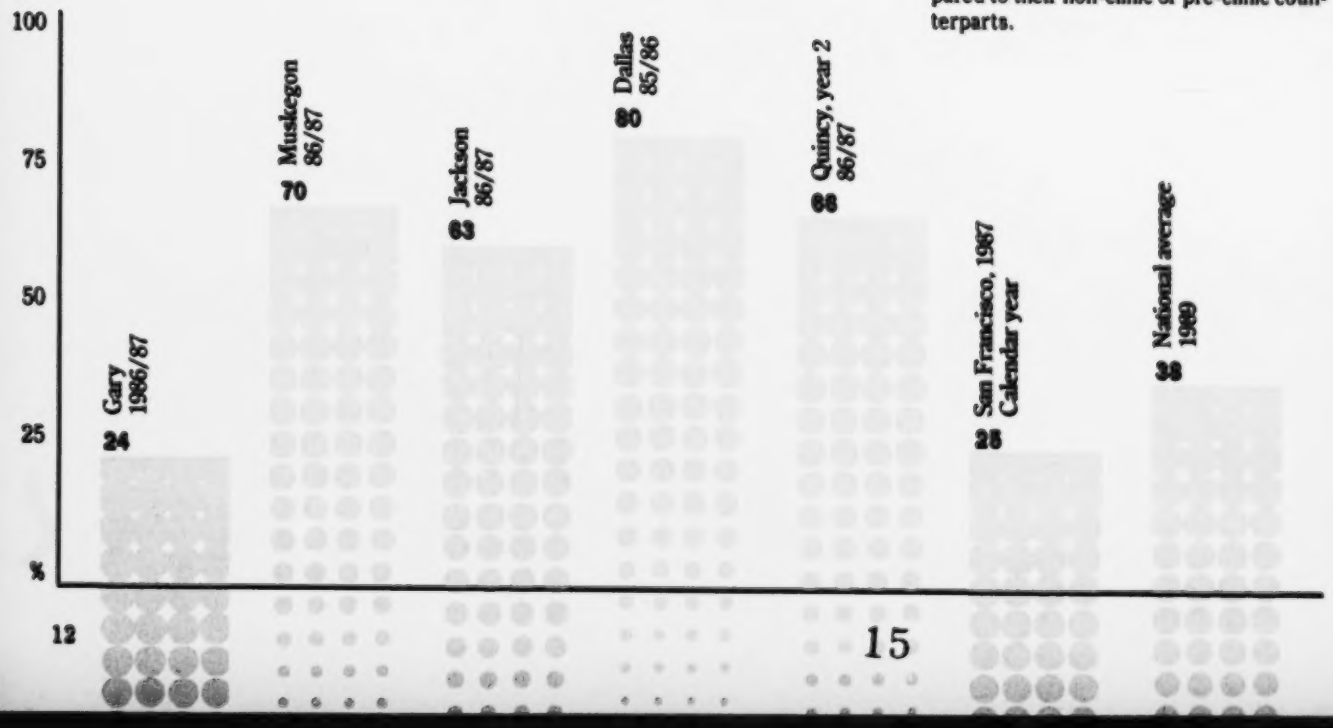
Hospital care. Experts have differed in their expectations of the impact of school-based clinics on visits to emergency rooms and nights spent in the hospital. Some have argued that clinics could reduce the need for these types of care, but others have contended that students use these services primarily for serious health problems, such as injuries and acute illness, that could not be prevented or treated by the school-based clinics. The results of this evaluation provide support for the latter view. There were no significant differences between the clinic and non-clinic samples in terms of either emergency room visits or hospitalization.

Impact on Risk-taking and Pregnancy Prevention

Percentages of total enrollment using clinic in a single year, according to clinic records.

The evaluation sought to determine the potential of school-based clinics to reduce students' absenteeism, use of cigarettes, alcohol, and illegal drugs and to encourage the use of contraception among sexually active teens.

Absenteeism. In Quincy and San Francisco, according to survey results, significantly fewer days were missed due to illness two years after the opening of the clinic, though this difference amounted to about half a day over a four-week period. No significant differences were found between the clinic and non-clinic schools in Gary, Muskegon and Jackson, while in Dallas, students in the clinic school missed more days than their non-clinic counterparts. An analysis of school attendance records in Quincy indicated that while there were fewer absences due to illness after the clinic opened, the overall rate of absenteeism (including absences for reasons other than illness) did not decrease. There was no significant decrease in the number of days skipped (non-excused absences) for any of the clinic schools surveyed compared to their non-clinic or pre-clinic counterparts.



Cigarette smoking, alcohol consumption and drug use. At three of the four sites where alcohol consumption was measured, the frequency of consumption was significantly lower at the clinic school than in its non-clinic counterpart; most of these differences were in the percentages of students who never or rarely drank. No significant difference in alcohol consumption was found in the fourth site. In one of these sites, where students at the clinic school underwent a psychosocial assessment at their first clinic visit designed to identify students who engaged in risk-taking behaviors and might therefore need counseling, students also smoked less frequently than students in the comparison school. There were no differences between the clinic and non-clinic samples in the frequency of use of illegal drugs at the two sites where this activity was measured. However, it is difficult to assess the true extent of illegal drug use through self-report, since many students may not answer this question truthfully.

Sexual activity. Opponents of school-based clinics frequently charge that clinics that dispense or prescribe contraceptives promote sexual activity among students. This criticism is not supported by the results of this evaluation; the clinics did not hasten the initiation of sexual intercourse, nor increase its frequency among sexually active students. None of the clinic schools had a significantly higher percentage of sexually active students than did their comparison schools, and sexually active students in the clinic schools did not have sex more frequently than their counterparts in the comparison schools. To the contrary, one of the clinic schools, Muskegon, had a smaller percentage of students who had ever had sex; sexually active students in two of the clinic schools, Jackson and Dallas, had sex for the first time at an older age than did the students in the comparison schools; and sexually active students in the San Francisco school reported less frequent sexual intercourse two years after the clinic opened than before the clinic opened.

Contraceptive use. At two of the six sites – Muskegon and San Francisco – significantly more students in the clinic-school samples than in the non-clinic-school or pre-clinic-school samples used some type of contraception at last intercourse. At both sites, this difference was due primarily to increased condom use, and to a lesser extent, birth control pill use, since clinic-school students at these sites were also more likely than their non-clinic-school counterparts to have used either birth control pills or condoms (rather than less effective methods such as withdrawal, rhythm or foam) the last time they had intercourse.

The Muskegon clinic transferred student records to a nearby Planned Parenthood clinic and provided vouchers for contraceptives to be redeemed free of charge there. The San Francisco clinic neither prescribed nor dispensed contraceptives, but provided contraceptive counseling and referrals. Notably, both clinics had aggressive outreach into the school to provide contraceptive education. In San Francisco, where there was a salient threat of AIDS, there were several programs developed through the clinic to make students aware of the need to use condoms. Students from this school also were exposed to intensive city-wide media campaigns promoting condom use.

In Gary, Jackson, Dallas and Quincy, no differences were found in the use of condoms or pills at last intercourse between the clinic and non-clinic samples. At the sites dispensing contraceptives or making vouchers available – Jackson, Muskegon, Dallas and Quincy – students who had ever used the clinic for contraception were more likely to use either condoms or pills at last intercourse than were those students who had never used the clinic for this purpose. The same self-selection effects identified in earlier studies applies for this last analysis as well, however.

Sexually active students in both clinic and non-clinic schools, who were asked for all reasons why they had not always used contraception during intercourse, most often said they didn't expect to have sex (21% to 57% cited this reason) and they didn't think pregnancy would occur (cited by 14% to 42%). Discomfort in going to a strange clinic, a partner's desire not to use contraception and apathy were other common explanations for their behavior. Students who cited these reasons for not practicing contraception were in fact, more likely not to practice contraception at last intercourse than students who did not check these reasons.

Pregnancy and birthrates. There were no differences among students at the clinic and non-clinic schools at any of the six sites as to whether they had been pregnant or gotten someone pregnant within the last 12 months. These results should be viewed cautiously, however, because some teenagers who conceived while in high school subsequently may have dropped out and not been present to complete the Student Health Survey, and other teenagers may not have reported previous pregnancies. However, this underreporting should not have differentially affected the results from the clinic-school and non- or pre-clinic-school samples surveyed.

Birthrates were calculated in two sites – Gary and Muskegon. In the former, there were variations in birthrates over time, but the rates varied similarly for both the clinic and control schools, indicating that the school-based clinic had no impact on birthrates. In Muskegon, comparisons were made in the birthrates at the clinic school before and after the clinic opened. Although there was a decline in the birthrate over time, it is not possible to determine from the available data whether the decline was more rapid after the clinic opened than before it opened.

Summary and Recommendations

The primary purpose of school-based clinics is to provide young people, many of whom have no other regular source of medical care, with comprehensive health care, and this evaluation indicates that these clinics were successful in achieving this objective. Very large percentages of students used the clinic in five of the schools studied, and in the sixth clinic, the proportion of users increased each year after it opened. Most students used the school-based clinic infrequently, primarily for treatment for illness, first aid, physical exams and counseling; however, a small core group of students used the clinic considerably more often, and it was these students upon whom clinics may have had their most significant impact. Easy access to the clinic and trust in its staff were the key factors that encouraged students to use a school-based clinic. Most non-use appears to be related to lack of need, but some students did not use a school-based clinic because they were concerned about confidentiality or because they "just didn't get around to it." These clinics must devise ways to allay such concerns and to motivate students in need to take advantage of their services.

Since most communities have alternative sources of health care available, a key question is whether school-based clinics actually increase students' access to health care or simply replace providers that were used in the past. While substitution did occur, the study findings indicate that the more resources these clinics had, the greater their impact on access: more students saw doctors and dentists in the clinic where those professionals were employed full-time, and more students received health maintenance exams when those exams were a routine part of the clinic program. However, the question of impact on access cannot be fully answered on the basis of the results from this study, in part because of the questions asked. In most clinics, including most of those evaluated in this project, the primary health care provider is a nurse or nurse practitioner, not a doctor, so that fewer doctor visits cannot be equated with less care.

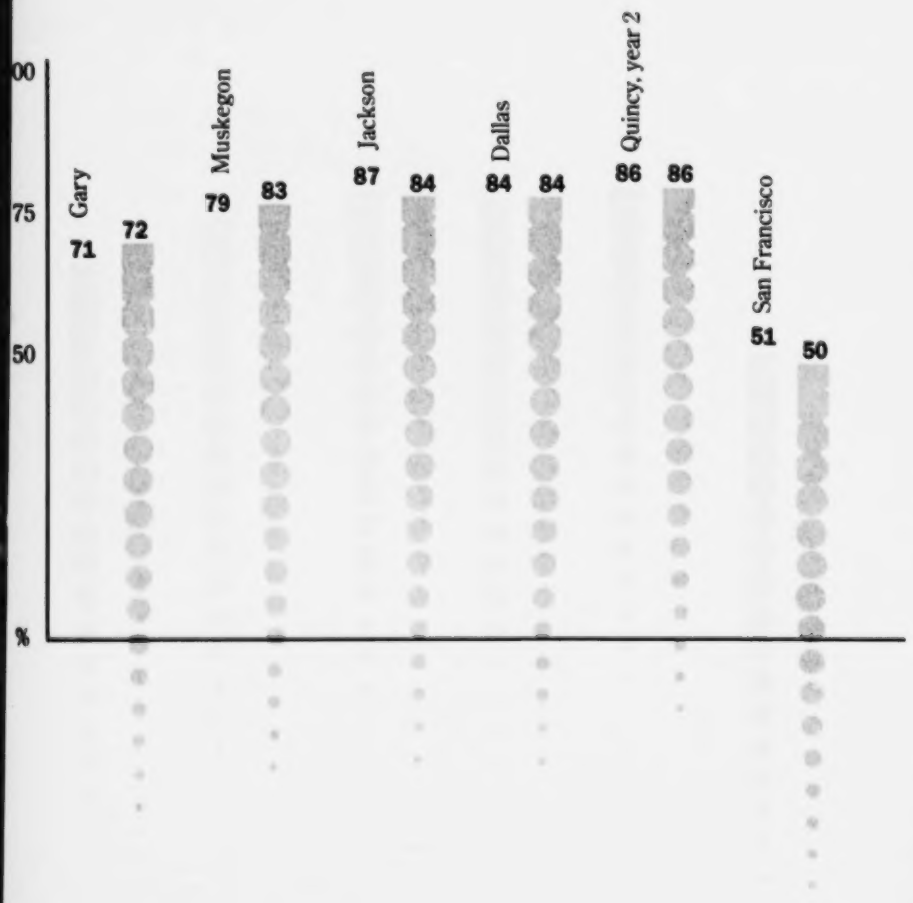
Future studies should build on what was learned in this evaluation by asking more specific questions about the types of health care workers seen and the frequency with which specific health needs such as minor illness, injury and treatment for STDs are unmet. To determine the impact of school-based clinics on emergency room and hospital admissions, it may also be helpful to examine the impact on emergency room use for different health reasons. Many admissions may be due to causes that could not possibly be prevented by clinics, while other causes may be preventable. It may also be helpful to examine students' perceptions of the role of school-based clinics in the context of other sources of medical care available to them in their communities.

The study provides encouraging indications that school-based clinics can reduce students' consumption of alcohol and tobacco. The impact on both smoking and drinking depends partially on educational efforts, and the evaluation results demonstrate the potential for school-based clinic intervention in this area.

The results of this study demonstrate that these school-based clinics did not encourage students to be sexually active, even when the clinic dispensed or prescribed contraceptives. Moreover, users of clinics that dispensed contraceptives were more likely than non-users in the same school to use birth control and to use effective methods of contraception.

The results also indicate, however, that providing contraceptives is not enough, by itself, to significantly increase contraceptive use among sexually active students in the entire school. The findings that the school-based clinic samples in Dallas, Jackson, and Quincy (which provided contraceptives) did not have higher rates of contraceptive use than their non-clinic school counterparts, and that the San Francisco clinic sample had higher rates of condom use than the pre-clinic sample even though it did not prescribe or dispense contraceptives, suggests that school-based clinics should provide contraceptive information as well as physical access to contraceptives. Community-wide intensive education campaigns, such as those mounted in San Francisco during the AIDS crisis, may motivate students to find sources of contraception, even if these sources are outside of the school. The physical availability of contraceptives within the school does not automatically provide greater incentive to use them, as is clear in those sites where the clinic dispensed birth control products but did little in the way of educational outreach or follow-up of patients and did not significantly increase contraceptive use.

According to survey data, school-based clinics had no effect on pregnancy rates. The birthrate did decline in one of the two schools where rates were measured, but the data varied from year to year and did not provide a conclusive explanation for why this occurred. The potential impact of school-based clinics on pregnancy and birthrates must continue to be studied, and in particular, should be assessed in connection with program changes described below that are designed to address these outcomes.



Percentages of students who ever had sexual intercourse, by site, according to the Student Health Survey results.

Clinic school

Non-clinic or Pre-clinic

Clinics can take a number of steps to enhance their effectiveness in preventing pregnancies among students and in reducing risk-taking in other areas. Some of the recommendations that follow have already been implemented in some clinics. In many cases where they have not, implementation will require additional resources, which are often difficult to generate. Even with adequate resources and effective strategies, however, clinics face a difficult task in trying to alter students' risk-taking behaviors, many of which are deeply rooted in the values and practices of the larger community in which they live. Recommendations include:

■ **Identify and target students engaged in risk-taking behaviors.** Clinics generally do a good job of treating and counseling students who seek their services, but they rarely have aggressive programs to identify risk-taking teens who are not motivated to come to the clinic. Scheduling routine physical examinations for all incoming students or administering psychosocial assessments can help clinics identify risk-takers. Clinics could also urge teachers and other personnel to refer risk-taking youth to them.

■ **Provide comprehensive reproductive health services.** This evaluation demonstrated that students were far more likely to use a school-based clinic for reproductive health care if the clinic prescribed or dispensed contraceptives as well as offered counseling about birth control methods and pregnancy testing. Intensive education efforts, both in the clinic and in the classroom, are also critical. (Some possible approaches are discussed below.)

■ **Appointments for family planning counseling and for birth control should be offered promptly,** ideally on a walk-in basis, because teens are impulsive and may not be willing to wait a week or longer to make important decisions about sex (or other risk-taking behaviors). Clinics also need to follow up family planning patients

more effectively in order to improve contraceptive continuation rates.

■ **Reproductive health programs should place greater emphasis on male responsibility.** The findings in San Francisco and Muskegon suggest that it is possible to increase the use of condoms by males. Males have been much less likely than females to visit a school-based clinic for contraceptives, but they can be reached through sports physicals, classroom activities, and the media.

■ **Conduct more outreach in the school.** Since most students use school-based clinics infrequently, it is important for clinics to undertake outreach efforts to provide teens with information and support that will help them avoid or discontinue risk-taking behavior. In the area of sexuality, clinics can work with the school to implement and participate in a comprehensive sexuality education program. In addition, clinics can place posters about the clinic and health-related topics throughout the school; write a regular column in the school newspaper; and make presentations at school assemblies.

■ **Group sessions facilitated by trained clinic staff can provide students with more opportunities** to resolve difficult personal dilemmas about sex and other risk-taking behaviors, and at the same time, help students become familiar with clinic staff.

■ **Develop community-wide programs.** School-based clinics cannot effectively address any difficult social problem in isolation. They need to involve the broader community, including parents, youth-serving agencies, religious and other community leaders, and the media.

■ **Increase permanent staff.** Many clinics will need additional staff to implement the strategies proposed here. They also need to maintain staff continuity. To save money, some clinics use rotating physicians from nearby medical schools. Others pay low wages and lose full-time staff once they have gained sufficient experience to command higher salaries elsewhere. Still others reassign more experienced staff to several schools or community health clinics in order to take wider advantage of their skills. Staff turnover reduces the continuity of the relationships that can be developed between the clinic and students.

■ **Provide education and deliver services earlier.** The results of this study indicate that many students were sexually active before entering high school. Where it is possible, programs operating school-based clinics should begin interventions in junior high or middle schools. These interventions should include effective peer-led programs to promote delayed sexual activity.

■ **Provide greater motivation for delaying pregnancy.** Some sexually active students were not highly motivated to avoid pregnancy. One possible way of providing this motivation may be by presenting pregnancy prevention messages within the context of a life planning curriculum, where students are encouraged to extend their education and begin a career before beginning a family. Also important is the provision of role models and improved job opportunities for youth in their communities.

School-based clinics have been successful in their short life span in providing primary and preventive care to the students they serve. Their effectiveness has been more intensely scrutinized than other health initiatives developed for adolescents, primarily because of the expectation that they could solve the myriad problems facing adolescents today. The trends found in this study indicate that, given the appropriate financial and community support, school-based clinics may be able to achieve the goals of improved health care and reduced risk-taking behavior among the students they serve. At the same time, the clinics will benefit greatly from opportunities to cooperate with other programs from diverse community organizations that also have been developed especially to meet the needs of adolescents. Reducing risk-taking behaviors and improving life options for adolescents are ambitious goals that require will, energy, and imagination. These goals can only be achieved if they are actively sought not only by the schools, but by a caring network that includes families and the larger community as well.

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The Center for Population Options (CPO) is a nonprofit educational organization dedicated to improving the quality of life for adolescents by preventing too-early childbearing.

CPO's national and international programs seek to improve adolescent decision-making through life planning and other educational programs, to improve access to reproductive health care, to promote the development of school-based clinics, and to prevent the spread among adolescents of HIV and other sexually transmitted diseases.

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